

CLAIMS

1. A system that enables a user to interact with a virtual control panel using a user controlled pointing object, wherein the system comprises a first tracking unit adapted to capture data representing the position of the pointing object, characterized in that the system further comprises:
 - a portable identification element,
 - a second tracking unit adapted to capture data representing the position of the identification element,
 - a storage unit, storing at least one pre-defined graphical interface representing a control panel of a device, said graphical interface comprising an interface for user interactions with the device,
 - a graphics unit, generating a graphical representation of the control panel based on said stored graphical interface,
 - a registering unit, registering said graphical representation of the control panel in a fixed relation to said portable identification element, based on said data representing the position of the identification element, to produce a virtual control panel,
 - a display unit, showing the user a view comprising the real world and the virtual control panel projected in a fixed relation to said portable identification element, and
 - an application unit, performing actions in response to the users interactions with the virtual control panel, and determining which actions to be performed based on the position of said user controlled pointing object in relation to the identification element.
2. A system according to claim 1, characterized in that the system is adapted to modify said graphical representation of the control panel in response to interactions between the user controlled pointing object and the virtual control panel.

3. A system according to claim 1 or 2, characterized in that said graphical interface is adapted for displaying data from the device and that the system is adapted to generate a graphical representation of the data and to display the data on the virtual control panel, in response to interactions between the user controlled pointing object and the virtual control panel.

4. A system according to any of the previous claims, characterized in that said user controlled pointing object is a handheld pointing device or a part of the user's body.

5. A system according to any of the previous claims, characterized in that the storage unit is adapted for storing a plurality of graphical interfaces, each representing a control panel of a particular device, that the system is adapted to generate and display a plurality of graphical representations of control panels for different devices based on said stored graphical interfaces of the devices and that the system comprises means for identifying which of the stored control panels to be displayed.

6. A system according to claim 5, characterized in that said means for identifying which of the stored control panels to be displayed comprises a recognition unit for recognizing and identifying devices in the environment of the user and that the graphics unit is adapted to generate a graphical representation of the control panel of an identified device based on the stored graphical interface of the identified device.

7. A system according to claim 6, characterized in that said recognition unit is adapted for recognizing and identifying unique identification markings on the devices.

8. A system according to any of the claims 5 - 7, characterized in that the system is arranged so that it automatically changes the virtual control panel displayed when another device is recognized and identified.

9. A system according to any of the previous claims, characterized in that said portable identification element is adapted to be carried by the user during interaction with the virtual control panel.

10. A system according to any of the previous claims, characterized in that said portable identification element is attachable to the body of the user.

11. A system according to any of the previous claims, characterized in that said display unit comprises a head mounted display showing the user said view.

12. A method that enables a user to interact with a virtual control panel using a user controlled pointing object, wherein the method comprises:

- receiving data representing the position of the user controlled pointing object,
- receiving data representing the position of a portable identification element,
- storing at least one pre-defined graphical interface representing a control panel of a device,
- generating a graphical representation of the control panel of the device based on said pre-defined graphical interface,
- registering said graphical representation of the control panel in a fixed relation to said portable identification element, based on said data representing the position of the identification element, to produce a virtual control panel,
- displaying a view comprising the real world and the virtual control panel projected in a fixed relation to said portable identification element, and
- performing actions in response to the users interactions with the virtual control panel, wherein the actions to be performed is determined based on the position of said

user controlled pointing object in relation to the position of the virtual control panel.

- 5 13. A method according to claim 12, comprising defining a two-way communication between the virtual control panel and the device, and generating said graphical representation of the control panel based on interactions between the user-controlled pointing object and the virtual control panel.
- 10 14. A method according to claim 12 or 13, wherein it comprises, receiving data from the device, generating a graphical representation of the received data and displaying the data on the virtual control panel.
- 15 15. A method according to claim 14, wherein said data is displayed on the virtual control panel in response to interactions between the user controlled pointing object and the virtual control panel.
- 20 16. A method according to any of the claims 12 – 15, wherein the method comprises:
 - storing a plurality of pre-defined graphical interfaces, each representing a control panel of a particular device,
 - determining which of the stored control panels to be displayed, and
 - 25 - generating a graphical representation of the control panel to be displayed based on the pre-defined graphical interface of the control panel.
- 30 17. A method according to claim 16, wherein it comprises recognizing a device, determining which of the stored control panels to be displayed based on which device is recognized and generating a graphical representation of the control panel of the recognized device based on the stored graphical interface of the
- 35 recognized device.

18. A method according to claim 17 characterized in that the devices are provided with unique identification markings and a device is recognized by identifying its unique identification marking.

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19. A method according to any of the claims 17 - 18, wherein the virtual control panel displayed is automatically changed when another device is recognized.

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20. A method according to any of the claims 12 - 19, wherein said portable identification element is carried by the user during interaction with the virtual control panel.

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21. A method according to any of the claims 12 - 20, wherein the virtual control panel comprises virtual interaction members and an audio feedback is generated when the user activates any of the virtual interaction members.

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22. A computer program comprising program instructions which, when loaded into a computer, causes the computer to perform the process of any of the claims 12 - 21.

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23. A computer readable medium having a program recorded thereon, where the program is to make a computer perform the steps of any of the claims 12 -21, when said program is run on the computer.